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Nuclear

August 16, 2005

SVP-05-061

U. S. Nuclear Regulatory Commission ATTN: Document Control Desk Washington, D.C. 20555

> Quad Cities Nuclear Power Station, Unit 1 Renewed Facility Operating License No. DPR-29 NRC Docket No. 50-254

Subject:

Licensee Event Report 254/05-005, "Automatic Reactor Scram from High Reactor Pressure due to a Malfunction of the Electro-Hydraulic Control System"

Enclosed is Licensee Event Report (LER) 254/05-005, "Automatic Reactor Scram from High Reactor Pressure due to a Malfunction of the Electro-Hydraulic Control System," for Quad Cities Nuclear Power Station.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73 (a)(2)(iv)(A), which requires the reporting of any event or condition that resulted in manual or automatic actuation of the reactor protection system.

Should you have any questions concerning this report, please contact Mr. W. J. Beck at (309) 227-2800.

Respectfully,

Timothy J. Tulon Site Vice President

Quad Cities Nuclear Power Station

cc: Regional Administrator - NRC Region III

NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

IEAA

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(See reverse for required number of digits/characters for each block) Estimated burden per response to comply with this mandatory collected into licensing process and fed back to industry. Send comments regarding but estimate to the Records and Folk/Privacy Service Branch (T-5 F52), Nuclear Regulatory Commission, Washington, DC 20555-0001, or by integer mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC not conduct or sponsor, and a person is not required to respond to,										ory collection ted into the arding burden 5 F52), U.S. or by internet of Information agement and					
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U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)		PAGE (3)		
Quad Cities Nuclear Power Station Unit 1	05000254	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
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PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 2957 Megawatts Thermal Rated Core Power

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION

Automatic Reactor Scram from High Reactor Pressure due to a Malfunction of the Electro-Hydraulic Control System

A. CONDITION PRIOR TO EVENT

Unit: 1

Reactor Mode: 1

Event Date: June 17, 2005

Mode Name: Power Operation

Event Time: 1120 hours

Power Level: 085%

Power Operation (1) - Mode switch in the RUN position with average reactor coolant temperature at any temperature.

B. DESCRIPTION OF EVENT

At 1120 hours (CDT) on June 17, 2005, the Unit 1 reactor automatically scrammed from 85% power due to a valid high reactor pressure signal. All control rods [AA] inserted to their full-in position. The maximum reactor pressure was approximately 1044 psig during the event. The reactor pressure increase was caused by a malfunction in the Electro-Hydraulic Control (EHC) system [JA], which resulted in closure of the main turbine control valves [TA]. The main turbine bypass valves (nine) opened as expected in response to the pressure increase. No reactor pressure vessel safety or relief valves [RV] were required to actuate during the event. Reactor water level decreased to approximately -20 inches, which resulted in automatic Group 2 and 3 isolations as expected. All systems responded properly to the event.

C. CAUSE OF EVENT

Based on information from instruments installed in response to previous anomalous indications, the cause of the scram was an intermittent failure in one of the Control Valve Input Circuit Cards in the EHC system. The Control Valve Amplifier, Load Limit, and Pressure Load Gate Amplifier cards, as well as their associated Operational Amplifier cards, were replaced, and the removed cards were subjected to failure analysis in a laboratory. The specific cause of the transient that initiated the system upset could not be determined. The root cause of the event is a transient malfunction of circuit cards within a non-fault tolerant EHC System (i.e., a transient anomaly that results in a system upset sufficient to cause a

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION								
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reactor scram without leaving any indication of its cause). No specific failure was identified.

D. SAFETY ANALYSIS

The safety significance of this event was minimal. All control rods inserted to their full in position, no reactor relief or safety valves were required to open, and all systems responded properly to the event.

E. CORRECTIVE ACTIONS

The Control Valve Amplifier, Load Limit, and Pressure Load Gate Amplifier cards, as well as their associated Operational Amplifier cards, were replaced, and the removed cards were subjected to failure analysis in a laboratory. No specific cause of failure was identified.

Quad Cities Nuclear Power Station is pursuing installation of a digital EHC system. This change will address the non-fault tolerant character of the system.

F. PREVIOUS OCCURRENCES

A review of LERs for the last three years did not identify any unit scrams due to EHC malfunction. However, since November 2002, there have been three instances of bad EHC cards and two instances of setpoint drift.

G. COMPONENT FAILURE DATA

The EHC cards are General Electric EHC Mark I Circuit Boards, component IDs 5600-A48, A49, A33, A34, A58 and A59.